CLAIMS

1. (previously presented) A method for the detection of a symbol from a received signal wherein the symbol is a selected symbol out of a predetermined set of symbols, wherein each symbol of the predetermined set is a symbol comprising a sequence of chips wherein each of the chips is phase shift keying modulated according to a selected modulation code wherein each of the selected modulation codes comprises a first sub-modulation code which is a selection from a plurality of first sets of predetermined phase modulating elements and a second sub-modulation code which is a selection from one second set of predetermined phase modulating elements wherein at least one of the predetermined phase modulating elements of the second set is a complex value, the method comprising:

a. correlating the received signal with each of the possible first sub-modulation codes for obtaining first correlation results and selecting a first correlation result;

b. phase-modulating the selected first correlation result with one of the possible second sub-modulation codes for each possible second sub-modulation code for obtaining second correlation results;

c. selecting a maximum second correlation result from the second correlation results;

d. selecting the symbol of the received signal based on the selected first correlation result and the selected maximum second correlation result.

2. (previously presented) A method according to claim 1, wherein for each first correlation result the value of a function of the correlation result is determined and subsequently the first correlation result which provides the maximum value of the function is selected wherein the function is determined by the type of modulation of the second sub-modulation code.

3. (previously presented) A method according to claim 2, wherein the function is a function of the real and/or imaginary parts of the first correlation result.

4. (previously presented) A method according to claim 1, wherein the number of first modulation results obtained in step a. equals $C_1*C_2*\ldots*C_{i-1}*C_i*C_{i+1}*\ldots*C_n$ wherein C_i is the number of elements of the i^{th} first set of the first sets.

5. (previously presented) A method according to claim 1, wherein in step b. in a first substep the selected first correlation result is phase-modulated with each of the possible second sub-modulation codes and in a second substep real values are determined from results obtained in the first substep for obtaining the second correlation results.

6. (currently amended) A method according to claim 1, wherein the number of second modulation results obtained in step [[c.]] b. equals the number of predetermined phase modulating elements of the second set.

7. (previously presented) A method according to claim 1, wherein in step c. a predetermined phase modulating element of the second set is selected which provides the selected second correlation result.

8. (currently amended) A method according to claim 1, wherein in step [[b.]] a. the predetermined phase modulating elements of the first sets are selected which provides the selected first correlation result.

9. (previously pending) A method according to claim 1, wherein selected predetermined phase modulating elements of the first sets are combined with a selected predetermined phase modulating element of the second set to obtain the symbol in the received signal.

10. (previously presented) A method according to claim 1, wherein in step a. a first correlator bank comprising a number of correlators is used, wherein this number of correlators equals the number of first correlation results.

11. (previously presented) A method according to claim 1, wherein in step b. a second correlator bank comprising a number of correlators is used, wherein this number of correlators equals the number of second correlation results.

12. (currently amended) An apparatus for the detection of a symbol from a received signal wherein the symbol is a selected symbol out of a predetermined set of symbols, wherein each symbol of the predetermined set is a symbol comprising a sequence of chips wherein each of the chips is phase shift keying modulated according to a selected modulation code wherein each of the selected modulation codes comprises a first sub-modulation code which is a selection from a plurality of first sets of predetermined phase modulating elements and a second sub-modulation code which is a selection from one second set of predetermined phase modulating elements wherein at least one of said predetermined phase modulating elements of said second set is a complex value, the apparatus comprising ~~correlating means for correlating the received signal with said modulation codes according to a correlation method and means for selecting a modulation code from said modulation codes on the basis of the correlation, wherein the apparatus further comprises~~:

a first correlator bank for correlating the received signal with each of the possible first sub-modulation codes for obtaining first correlation results;

a first selector for selecting a first correlation result from the first correlation results;

a second correlator bank for phase-modulating the first correlation result with one of said possible second sub-modulation codes for each possible second sub-modulation code for obtaining second correlation results;

a second selector for selecting a maximum second correlation result from the second correlation results;

a control-unit that controls the first selector on the basis of the first correlation results; and

a third selector for selecting the symbol of the received signal on the basis of the selected first correlation result and the selected maximum second correlation result.

13. (previously pending) An apparatus according to claim 12, wherein the control-unit determines for each first correlation result the value of a function of the correlation result, wherein the function is determined by a type of modulation of the second sub-modulation code, and subsequently controls the first selector on the basis of a maximum value of the function in such a way that the corresponding first correlation result is selected by the first selector and passed to the second correlator-bank.

14. (previously presented) An apparatus according to claim 13, wherein the function is a function of the real and/or imaginary parts of the first correlation result.

15. (previously pending) An apparatus according to claim 12, wherein the number of first correlation results obtained by the first correlator-bank equals $C_1*C_2*\ldots*C_{i-1}*C_i*C_{i+1}*\ldots*C_n$ wherein C_i is the number of elements of the i^{th} first set of the first sets.

16. (previously presented) An apparatus according to claim 12, wherein the second correlator-bank comprises means for phase-modulating the selected first correlation result with each of said possible second sub-modulation codes for obtaining phase modulation results and also comprises means for determining real values of the obtained phase-modulated results for obtaining the second correlation results.

17. (previously presented) An apparatus according to claim 12, wherein the number of second correlation results equals the number of predetermined phase modulating elements of the second set.

18. (previously pending) An apparatus according to claim 12, wherein the second selector selects a predetermined phase modulating element of the second set which provides the selected second correlation result.

19. (previously pending) An apparatus according to claim 12, wherein the first selector selects predetermined phase modulating elements of the first sets which provides the selected first correlation result.

20. (previously pending) An apparatus according to claim 12, wherein the third selector combines a selected predetermined phase modulating element of the second set and selected predetermined phase modulating elements of the first sets to obtain the symbol of the received signal.

21. (previously pending) A method according to claim 1, wherein each symbol of the predetermined set is a CCK symbol.

22. (previously pending) An apparatus according to claim 12, wherein each symbol of the predetermined set is a CCK symbol.

23. (new) A method according to claim 1, wherein:

for each first correlation result the value of a function of the correlation result is determined and subsequently the first correlation result which provides the maximum value of the function is selected wherein the function is determined by the type of modulation of the second sub-modulation code, wherein the function is a function of the real and/or imaginary parts of the first correlation result;

the number of first modulation results obtained in step a. equals $C_1*C_2*\ldots*C_{i-1}*C_i*C_{i+1}*\ldots*C_n$ wherein C_i is the number of elements of the i^{th} first set of the first sets;

in step a. the predetermined phase modulating elements of the first sets are selected which provides the selected first correlation result;

in step b. in a first substep the selected first correlation result is phase-modulated with each of the possible second sub-modulation codes and in a second substep real values are determined from results obtained in the first substep for obtaining the second correlation results;

in step c. a predetermined phase modulating element of the second set is selected which provides the selected second correlation result;

selected predetermined phase modulating elements of the first sets are combined with a selected predetermined phase modulating element of the second set to obtain the symbol in the received signal

in step a. a first correlator bank comprising a number of correlators is used, wherein this number of correlators equals the number of first correlation results;

in step b. a second correlator bank comprising a number of correlators is used, wherein this number of correlators equals the number of second correlation results; and

each symbol of the predetermined set is a CCK symbol.

24. (new) An apparatus according to claim 12, wherein:

the control-unit determines for each first correlation result the value of a function of the correlation result, wherein the function is determined by a type of modulation of the second sub-modulation code, and subsequently controls the first selector on the basis of a maximum value of the function in such a way that the corresponding first correlation result is selected by the first selector and passed to the second correlator-bank, wherein the function is a function of the real and/or imaginary parts of the first correlation result;

the number of first correlation results obtained by the first correlator-bank equals $C_1*C_2*\ldots*C_{i-1}*C_i*C_{i+1}*\ldots*C_n$ wherein C_i is the number of elements of the i^{th} first set of the first sets;

the second correlator-bank comprises means for phase-modulating the selected first correlation result with each of said possible second sub-modulation codes for obtaining phase modulation results and also comprises means for determining real values of the obtained phase-modulated results for obtaining the second correlation results;

the first selector selects predetermined phase modulating elements of the first sets which provides the selected first correlation result;

the second selector selects a predetermined phase modulating element of the second set which provides the selected second correlation result;

the third selector combines a selected predetermined phase modulating element of the second set and selected predetermined phase modulating elements of the first sets to obtain the symbol of the received signal; and

each symbol of the predetermined set is a CCK symbol.